

HR-248 Evaluation of a Mobile Rut Depth Device for the Pavement Management Program

Abstract

The Iowa DOT, Highway Division, Office of Materials has been conducting pavement condition inventory surveys on a regular basis since 1969 as input for pavement management. Development of substantial wheel rutting on paved roadways results in a potential hazard to highway safety. As such, rut depths are an important factor in the pavement condition surveys.

However, manual rut depth measurement is labor intensive. With fewer personnel it is necessary to adopt methods which will reduce the time and cost of obtaining pavement condition data, specifically rut depth measurements.

A mobile rut depth survey would yield a number of valuable benefits – safety of the data gathering personnel and the traveling public, monetary savings of about 50 percent, and time savings.

The mobile unit tested was a 10-foot bumper mounted sensor bar with CRT readout and a cassette recorder to store the data. The bumper-mounted sensor bar included a rigid 6-foot center portion with a fold-out 2-foot extension at each end. On this bar were placed 11 sonar-type distance sensors at one foot intervals. The mobile device was manufactured by SIE Operation Company of Fort Worth, Texas.

Testing was limited because of several malfunctions of the equipment. However, the tests which were successfully performed indicated that the device would work satisfactorily for rut depth measurements at highway speeds. The researchers recommended that the Iowa DOT continue to pursue purchase and use of a commercially-available, mobile, non-contact rut depth device.